

REPORT FROM THE COLLABORATION BETWEEN NORWAY, THE CZECH REPUBLIC AND ESTONIA

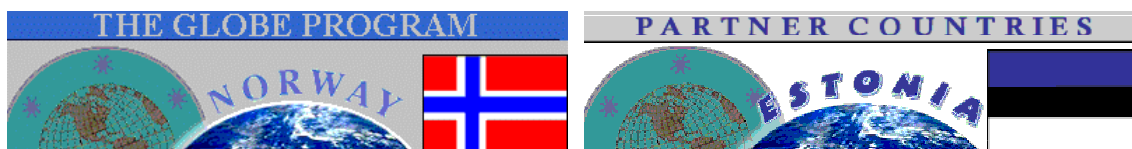
Karl Torstein Hetland
Country Coordinator Norway

Summary

In 1999 we established the first collaboration between schools in Norway and The Czech Republic and in 2000 the collaboration with schools in Norway and Estonia started. Both projects started with a seminar for teachers and principals. At the seminar the schools made plans for their future collaboration.

After two years we have seen a lot of student and teacher exchanges and a common Budburst project has been established. In this report we show how we run the workshop in Estonia in September 2000 and a presentation of the Extended Budburst Project.

Workshop in Estonia September 2001



Estonia- Norway Globe collaboration
Seminar September 21.- 23. 2000 in Sagadi
Supported by SAS & Coca Cola Environmental Foundation

REPORT

Thursday September 21.

14.35	The Norwegians arrive at Tallinn Airport	
15.15	Bus from Tallinn Airport	
15.30	Sightseeing in Tallinn	  
17.30	Departure for Sagadi	

19.00	Arriving Sagadi			
19.30	Dinner			
20:30	Lahemaa National Park and Sagadi State Forest Management Centre		Jaanus Tuusti, head of the SAGADI centre	
	Social gathering			



Friday September 22.

07.30	Breakfast	
09.00	Introduction by CC Ylle Kikas and CC Karl Torstein Hetland	
09.20	Welcome speeches:	
	Kai Lie , Norwegian Ambassador in Tallinn	
	Andres Tarand , Chairman of the Riigikogu Foreign Affairs Committee	
	Peep Ratas , Secretary General of the Ministry of Education	

10.00	Environmental Education in Estonia Imbi Henno Chief expert of science and environmental education of the Ministry of Education			
	Ülle Kikas , GLOBE program coordinator, University of Tartu			
10.30	Environmental Education in Norway Karl Torstein Hetland , country coordinator of the GLOBE program			
10.50	Coffee and tea			
11.15	Presentation of the schools (until 10 minutes per school)	School representatives		
12.45	Lunch			
14.00	Outdoor activities	Optional: Riding; golf; hike in forest/learning plants. Please take walking shoes!		
17.00-19.00	School presentations	School representatives		
20.00	Dinner + sauna(no pictures) 			

Saturday September 23.

07.30	Breakfast			
09.00	Ideas for joint projects between schools			Karl Torstein Hetland
09.45	Coffee and tea			

10.15	Meeting between partner schools - ideas for collaboration - student/teacher exchange agreement on a time schedule Write a small report			
11:45	Presentation of ideas from two partner schools. The other schools follow up with extra ideas			
12:15	Closing remarks			
12:45	Lunch			
14.00	Bus leaving from Sagadi Sightseeing.			
17:30	Arrival at Hotel SUSI (Petreburimnt 48) (4 km from Tallinn city centre)			
19.00	Dinner at Old Hansa in Tallinn			

**COLLABORATION PLANS
BETWEEN
ESTONIAN AND NORWEGIAN
GLOBE SCHOOLS
(example)**

Muhu and Tjodalyng School



1. We exchanged Email addresses and we want to collaborate not only in Science but also in History, Music, English and Handicraft.
Start autumn 2000.
2. In spring exchange information about when different trees and flowers are blooming and when birds came back after winter camps. We concentrate on 5 species of each.
Start Mars 2001.
3. Send Email and letters between teachers and pupils to get to know each other better.

Start winter 2000.

4. Try to send teachers and pupils between our countries. The Estonia class to us in Feb/Mars and a class from Norwegian school to Estonia in June.
5. Exchanging lists of what sorts of fishes we find in the sea.
6. Pupils exchange questions and answers about their countries by using email or letters.
7. Exchanging Globe data and make diagrams and send to each other.

We wish to start with point 1-4. Point 5-7 are ideas for the future



Phenology project

Collaboration between schools in

The Czech Republic, Estonia and Norway

GLOBE-schools in Estonia, The Czech Republic and Norway are participating in an extended BUDBURST registration. In addition to register the Budburst of some common trees and Lilac, we want to register the blossom of some flowers and the migration of some birds.

The Cloned Lilac is not available before spring 2002, but we use local lilac as one of the Budburst plants (see observation form).




1. Introduction



In GLOBE we have at the moment several Phenology protocols: Budburst, Lilac, Green-Up and Green-Down. In our project we will try to do Budburst + Lilac and observation of blossom of one flower (*Hepatica nobilis*) and arrival date of one migrating bird (*Motacilla alba alba*). If *Hepatica nobilis* is not a common flower, you can use *Anemone nemorosa* L.

We want you to follow the ordinary protocol for Budburst and Lilac so these will not be described here. You find the information at:

[http://archive.globe.gov/sda-bin/wt/gh/GRR+R\(XWRX319\)L\(en\)+Dg\(gmx/el\)Gn\(Budburst~20and~20Lilac~20Phenology](http://archive.globe.gov/sda-bin/wt/gh/GRR+R(XWRX319)L(en)+Dg(gmx/el)Gn(Budburst~20and~20Lilac~20Phenology)

In our project we have chosen these species:

FLOWERS	
	<i>Hepatica nobilis</i> Schreber
	<i>Anemone nemorosa</i> L
	<i>Syringa vulgaris</i>

TREES	
	Betula pendula
	Betula pubescens (high heights)
BIRDS	
	Motacilla alba alba

You are free to choose more species if you want. We want to keep the compulsory workload as low as possible. For a full number of species look at the Excel registration form.

2. Organisation

Our idea is that you try to involve as many students as possible in the observation. Perhaps even parents and grandparents can be involved. Then you get more observations on different trees and flowers. I am sure students know where the first *Hepatica nobilis* usually appears.

We want to challenge students to observe trees close to their homes. At some schools students come from a large surrounding area and then we will observe all the local variations.

Please send us a picture of the students you have involved and write a few words about how you have organised your work. We want to “publish” all good ideas so we can share our ideas and experiences. We hope to see many creative ideas.

3. Observation guide

FLOWER



Hepatica nobilis
Schreber



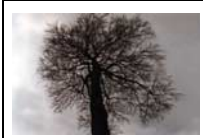
Anemone nemorosa L

- Make observations of the start of blossom and full blossom
- Register date and coordinates + name of the area
- Take a photo of the flower and the surroundings



Syringa
vulgaris


- Choose one local Lilac as close to your school as possible. This Lilac you can hopefully follow over several years. If possible let students pick a Lilac close to there home, so you get more observations.
- Follow the Lilac protocol in Globe. That means the date for start of blossom.
- Fill in the Observation Form
- Take a photo

TREE	
	Betula pendula
	Betula pubescens (high heights)

- Pick one tree (Silver Birch) as close to school as possible. This tree you can hopefully follow for several years. Let the students pick a tree close to there home. Also choose other species if that is convenient for you.
- Observe the beginning of Budburst. That means the date where the leaves are just coming out of the bud and/or the date of the first small leaves. The leaves should look like this:



- Follow the Buddburst protocol and registrate your data at the Globe server.
- Take a photo

BIRDS	
	Motacilla alba alba

- Observe the date of arrival of Motacilla alba alba.
- Take a photo if possible
- Fill in the observation form






SEND THE REGISTRATION FORM BY EMAIL TO karlth@online.no AS SOON YOU HAVE MADE YOUR OBSERVATIONS OF ONE SPECIE.

Links to more information:

European Phenology Network: <http://www.dow.wau.nl/msa/epn/>

Prof. Dag Klaveness: <http://www.uio.no/~dagkl/Phenology.html>

OBSERVATION FORM FOR EXTENDED BUDBURST
The Czech Republic, Estonia and Norway

	Latin name	Local name	Name of area	Date of observation (dd.mm.yy)	Longitude (E)	Latitude (N)	Height (m)
FLOWER				Beginning of blossom			
				Full blossom			
	Hepatica nobilis Schreber	Blåveis					
	Alternative	Anemone nemorosa L.					
		Syringa vulgaris	Syrin				
TREE				Greening			
				First leaf			
	Betula pendula	Lavland bjørk					
	Betula pubescens	Fjellbjørk					
 							
BIRDS				First confirmed observation			
		Motacilla alba alba	Linerle				